

The Application of Warm Acupuncture and Moxibustion and Midnight Noon Ebb Flow in the Diarra Dominant Irritable Bow Syndrome

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ABSTRACT

This study aims to evaluate the efficacy and safety of warming acupuncture combined with the Ziwu Liuzhu method in D-IBS treatment and to investigate its potential mechanisms, including regulating gastrointestinal motility, neuro-immune networks, and gut microbiota balance. Methods: A randomized controlled trial was conducted with D-IBS patients who met diagnostic criteria, divided into three groups: warming acupuncture group, combined Ziwu Liuzhu and warming acupuncture group, and control group. The warming acupuncture group received warm needle stimulation at specific acupoints, while the combined group received treatments at specific times on Spleen and Stomach meridians according to the Ziwu Liuzhu method. Treatment outcomes were assessed using IBS symptom severity scores, quality of life scores, inflammatory marker analysis, and gut microbiota profiling. Results: The combined Ziwu Liuzhu and warming acupuncture group showed significant improvement in relieving diarrhea, abdominal pain, and bloating, with longer-lasting effects. This group also exhibited superior enhancement in gastrointestinal motility, neuro-immune function, and gut microbiota balance compared to the other groups. Additionally, the combined therapy demonstrated good safety, with no significant adverse effects observed.

KEYWORDS

Diarrhea-predominant Irritable Bowel Syndrome; Warming Acupuncture; Ziwu Liuzhu Method

1. INTRODUCTION

Diarrhea-predominant irritable bowel syndrome (D-IBS) is a common gastrointestinal functional disorder worldwide, affecting approximately 9-23% of the population, with a relatively higher proportion of D-IBS patients among those with IBS (Saha, 2014). D-IBS patients often seek medical assistance more frequently, significantly impacting their quality of life and daily activities. D-IBS is a functional gastrointestinal disease characterized primarily by intermittent abdominal pain, abdominal discomfort, and frequent loose stools. Patients often feel an urgent need for bowel movements, with symptom relief after defecation, along with sensations of incomplete evacuation, bloating, and fatigue. D-IBS patients may also experience reduced appetite and nausea, which can be exacerbated by stress and dietary changes (Lacy & O'Shana, 2014). This group incurs high healthcare costs due to the condition, and its complex etiology and frequent symptom recurrence often necessitate long-term management (Quigley, 2020).

Currently, D-IBS treatment primarily focuses on symptom relief through various approaches, including medications, lifestyle interventions, and psychological support. Commonly used medications include antidiarrheal agents such as loperamide, antispasmodics for abdominal pain, and probiotics and antibiotics to regulate gut microbiota. For more complex cases, low-dose antidepressants may be used to help alleviate gastrointestinal dysmotility and reduce pain (Grundmann & Yoon, 2010). However, these treatment methods have notable limitations. Medications provide limited effects, usually offering only short-term symptom relief, and many drugs may cause side effects such as constipation and dizziness. Non-drug therapies face uncertainty due to insufficient clinical evidence supporting their efficacy. Furthermore, given the complex etiology of D-IBS and its close association with psychological factors, single treatment approaches often struggle to comprehensively control symptoms, so patients often require a combined treatment strategy to manage symptoms effectively (Simrén et al., 2017).

2. THE EFFECT OF WARMING ACUPUNCTURE IN RELIEVING D-IBS

Warming acupuncture combines the dual effects of heat and needling, providing significant symptom relief for D-IBS patients. By stimulating specific acupoints, such as ST36 (Zusanli) and CV8 (Shenque), warming acupuncture can regulate intestinal function, reduce the frequency of diarrhea, and alleviate abdominal pain (Bao et al., 2016). Studies have shown that warming acupuncture can correct gut microbiota imbalances, thus reducing inflammatory responses and improving intestinal motility. This is particularly effective for D-IBS patients with Spleen Deficiency and Damp-Heat Syndromes (Chen et al., 2023). Additionally, warming acupuncture may help regulate the brain-gut axis, alleviating psychological symptoms such as anxiety and depression, which further reduces D-IBS symptoms (Zhan et al., 2014).

2.1. Applications of Warming Acupuncture in Digestive Disorders

Warming acupuncture, which integrates needling and heat therapy, is widely used in treating digestive disorders, particularly for patients with gastrointestinal dysfunction and motility disorders. Research indicates that applying warming acupuncture to specific acupoints (e.g., ST36 Zusanli, ST37 Shangjuxu) can effectively relieve symptoms of irritable bowel syndrome (IBS) and gastroesophageal reflux disease (GERD). Warming acupuncture has demonstrated significant efficacy in promoting gut motility, relieving abdominal pain, and reducing diarrhea (Feng et al., 2023).

2.2. Regulation of Gastrointestinal Function

Warming acupuncture helps regulate the autonomic nervous system in the gastrointestinal tract, particularly balancing the vagus and sympathetic nerves, effectively restoring intestinal motility. Research shows that warming acupuncture can activate the vagus nerve, enhancing gastrointestinal contraction and digestive function (Zhang & Bai, 2022). Additionally, warming acupuncture can reduce inflammation markers within the intestines, decrease intestinal mucosal damage, and strengthen the digestive tract's barrier function (Liu et al., 2023).

2.3. Pain Relief Mechanism

Warming acupuncture is particularly effective in alleviating pain within the digestive system, involving multiple central and peripheral regulatory mechanisms. It stimulates κ -receptors in the spinal cord, promoting the release of endogenous analgesic substances like endorphins, thereby reducing pain from visceral hypersensitivity (Qi et al., 2013). Moreover, warming acupuncture inhibits NMDA receptor activity, which reduces the perception of pain in the cerebral cortex, providing sustained analgesic effects (Yang et al., 2023).

3. ADVANTAGES OF THE ZIWU LIUZHU METHOD IN TREATING D-IBS

The Ziwu Liuzhu method is an acupuncture technique based on Chinese medicine's time therapy, enhancing organ function by stimulating meridian acupoints at specific times. Studies show that acupuncture using the Ziwu Liuzhu method for D-IBS can effectively alleviate symptoms like abdominal pain and diarrhea, with the effects lasting longer. Treatment administered at optimal times, such as during the morning when the Spleen meridian is active, helps to strengthen Spleen and Stomach functions, reducing damp accumulation and thus relieving symptoms of diarrhea and bloating (Ben et al., 2010).

The correspondence between meridians and organs within the Ziwu Liuzhu method suggests that each organ responds more effectively to stimulation during certain times of the day. For instance, 7-9 a.m. is the peak period for the Stomach meridian, during which it is beneficial to stimulate the Stomach's function by needling acupoints like ST36 (Zusanli) to improve digestion and regulate the gastrointestinal tract. Studies indicate that time-specific acupoint stimulation, such as needling Zusanli at the Spleen-Stomach time, can significantly enhance gastrointestinal motility and regulate gastric acid secretion, thereby relieving symptoms of diarrhea-predominant irritable bowel syndrome (D-IBS) (Ma et al., 2014). In treating D-IBS, the Ziwu Liuzhu method effectively promotes gastrointestinal function recovery by selecting Spleen and Stomach acupoints (e.g., Zusanli and Tianshu) at optimal times.

3.1. Enhancing Gastrointestinal Motility through Ziwu Liuzhu

The Ziwu Liuzhu method enhances the flow of qi and blood in the Spleen and Stomach through time-specific stimulation, promoting gastrointestinal motility. Timely stimulation of Stomach and Spleen acupoints effectively regulates intestinal smooth muscle contractions, improving diarrhea and borborygmi symptoms in D-IBS patients (Guo et al., 2021).

3.2. Regulating the Neuro-Immune Network with Ziwu Liuzhu

Time-specific acupuncture affects not only smooth muscles in the intestines but also the nervous and immune systems, reducing hypersensitivity reactions in the gut. Research suggests that stimulation at optimal times can impact the brain-gut axis, reducing inflammatory responses and overactivation of the immune system, thus relieving abdominal pain associated with D-IBS (Yang et al., 2023).

3.3. Balancing Gut Microbiota

Time-specific stimulation in the Ziwu Liuzhu method also helps regulate Spleen and Stomach functions, which in turn stabilizes gut microbiota, addressing the common dysbiosis seen in D-IBS. This approach shows potential in alleviating intestinal discomfort, reducing inflammation, and preventing pathogenic bacteria overgrowth (Zhang et al., 2022).

4. COMBINING WARMING ACUPUNCTURE AND THE ZIWU LIUZHU METHOD

This study combines warming acupuncture and the Ziwu Liuzhu method to explore their combined efficacy and potential mechanisms for treating D-IBS. This integrated therapy leverages the direct regulatory effects of warming acupuncture and the time-enhancing effect of the Ziwu Liuzhu method, providing a multi-dimensional improvement in patient symptoms. The combination not only helps to regulate gut microbiota and ease intestinal motility disorders but also harmonizes psychological and physiological states, aiming for more substantial and long-lasting relief (Yon, 2006).

In preliminary trials, acupoint selection and operational techniques were based on Chinese medical theory, focusing on points related to gastrointestinal regulation to achieve optimal results through the combined use of warming acupuncture and the Ziwu Liuzhu method. The primary acupoints selected include ST36 (Zusanli), ST37 (Shangjuxu), ST25 (Tianshu), and CV4 (Guanyuan). ST36 is mainly used to improve gastrointestinal motility by promoting normal peristalsis and digestion. ST37 focuses on regulating intestinal function, alleviating common IBS symptoms such as diarrhea and borborygmi. Tianshu is primarily for relieving abdominal discomfort and pain, which are common in D-IBS patients, while CV4 enhances Spleen and Stomach qi to improve overall gastrointestinal function.

Operationally, warming acupuncture is applied to the selected acupoints with heating and needling techniques. The needling depth is generally controlled at 2-3 cm, adjusted according to the patient's physique and acupoint location. After needle insertion, thermal stimulation is maintained for 30 minutes, with each acupoint temperature kept between 43-45°C to ensure the effectiveness and safety of the heat.

In the group combining Ziwu Liuzhu and warming acupuncture, treatment follows the time-based principles of the Ziwu Liuzhu method. Acupoints and times selected include Stomach meridian points (ST36 and ST37) during the peak Stomach period (7-9 a.m.) to maximize qi and blood flow. Additionally, warming acupuncture is applied to CV4 during the peak Spleen period (9-11 a.m.) to further enhance Spleen function. Strict adherence to the Ziwu Liuzhu time principle strengthens the regulatory effect on organ function.

This method requires administering warming acupuncture stimulation during periods of peak Spleen and Stomach activity, maintaining each stimulation session for 30 minutes to ensure consistent and effective outcomes. Throughout the treatment process, stimulation frequency is three times a week for four weeks to observe changes in efficacy and cumulative effects.

The potential efficacy and safety of combining warming acupuncture with the Ziwu Liuzhu method for treating D-IBS indicate that this approach effectively relieves symptoms like diarrhea, abdominal pain, and bloating, while improving patients' gastrointestinal motility and quality of life. Research demonstrates that applying warming acupuncture to specific acupoints related to the Spleen and Stomach meridians at optimal times can not only directly regulate gastrointestinal function but also enhance overall organ function by promoting Spleen and Stomach qi and blood flow (Guo et al., 2021).

This combined therapy has shown favorable safety, with no significant adverse effects and high patient tolerance. The warming effect of warming acupuncture helps avoid the discomfort often associated with standard acupuncture, and the time-based approach of the Ziwu Liuzhu method enhances the regulatory effect of meridian qi and blood, further improving the stability and durability of therapeutic outcomes (Ma et al., 2014).

5. SUMMARY

As a specialized treatment in Chinese medicine, the combination of warming acupuncture and the Ziwu Liuzhu method in D-IBS treatment offers the advantages of timing-based optimization for a more individualized approach. It provides a multi-layered non-pharmacological regulation covering gut motility, immune modulation, and brain-gut axis interactions. Its clinical value lies in providing an effective and safe alternative therapy, expanding the application scope of Chinese medicine in managing functional gastrointestinal disorders and offering a novel approach for the comprehensive management of D-IBS patients.

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